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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,837	04/12/2001	Toru Kawaguchi	07553.0021	1971

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER  
LLP  
1300 I STREET, NW  
WASHINGTON, DC 20005

EXAMINER

NGUYEN, TU T

ART UNIT PAPER NUMBER

2877

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/832,837

Applicant(s)

KAWAGUCHI, TORU

Examiner

Tu T. Nguyen

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 91-114 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 91,92 and 97-114 is/are rejected.
- 7) ☒ Claim(s) 93-96 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Serial Number: 09/832,837  
Filing Date: 04/12/01

Paper No: 7

Detailed Office Action

*Claim Objections*

Claim 91 is objected to because of the following informalities:

line 10, "the incident light beam" lacks of antecedent and basis.

*Claim Rejections - 35 U.S.C. § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 104-105,114 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 104, line 3, "the surface position detection device of claim 91" is indefinite. It is not clear claim 104 is an dependent claim or an independent claim. For the purpose of examination, the claim treated as a dependent claim which is depended on claim 91.

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With respect to claim 105, line 4, refer to discussion in claim 104 above. The claim is indefinite because the claim is a method claim but depended on an apparatus claim.

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With respect to claim 114, refer to discussion in claim 104 above.

***Claim Rejections - 35 U.S.C. § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 91-92,97-114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckley et al (6,064,759) in view of Hisano et al (6,104,524).

With respect to claims 91,106, Buckley discloses a system for determining the location of a surface (column 33, lines 5-10). The system comprises: a projection system 3 (fig 1), a light receiving system 2 (fig 1).

Buckley discloses scanning the surface of the object (fig 12A). However, Buckley does not disclose a light beam deflector. Hisano discloses a deflector 36 (fig 2), having an even number of reflection surfaces, for scanning a surface,. It would have been obvious to modify Buckley's system with Hisano's deflector to determine the location of the surface more accurate.

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With respect to claims 92,108, Hisano's prism having un-parallel reflection surfaces 36A, 36B (fig 4A).

With respect to claims 97-98,101-102,109-110,112, Hisano does not disclose the optical material of the prism or holding member. However, it would have been obvious a design choice to modify Hisano's prism or holding member with different optical material to facilitate the measurement.

With respect to claims 99,111, Hisano does not disclose a holding member. However, the skill artisan would have been motivated to modify Hisano with a holding member to hold the reflecting surface better to make the measurement more accurate.

With respect to claims 100,103,107,113, it would have been obvious to modify Hisano's prism to yield different optical paths for measuring different surfaces of the object.

With respect to claims 104-105,114, refer to discussion in claim 91 above for the surface position detection device. Further, it would have been obvious to combine the surface position detection device with an exposure apparatus to detect the surface of the wafer.

***Allowable Subject Matter***

~~Claims 93-96 are objected to as being dependent upon a rejected base claim, but would be~~  
allowable if rewritten in independent form including all of the limitations of the base claim and  
any intervening claims.

Prior arts of record does not disclose a prism comprising: a first transmission surface, a first and the second reflection surfaces, a second transmission surface as claimed in claim 93 in

combination with all the limitations in the base claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu T Nguyen whose telephone number is (703) 306-9185. The examiner can normally be reached on M-T 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on (703) 308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



**Tu T. Nguyen**  
**Primary Examiner**  
**Group Art Unit 2877**

8/20/03